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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/765,205	01/28/2004	Zhiqun He	69978-013	7627
20277 7590 04/29/2008 MCDERMOTT WILL & EMERY LLP 600 13TH STREET, N.W. WASHINGTON, DC 20005-3096				
EXAMINER				
HOANG, HIEU T				
ART UNIT		PAPER NUMBER		
2152				
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/765,205

Applicant(s)

HE ET AL.

Examiner

HIEU T. HOANG

Art Unit

2152

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 February 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-12 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-946)
- 3) ☐ Information Disclosure Statement(s) (PTO/SE/US)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

1. This office action is in response to the communication filed on 02/26/2008.
2. Claims 1-12 are pending.

Response to Amendment

3. The objection of figures 1, 2A, 2B and 3 has been withdrawn due to the amendment. Previous claim objections and 35 U.S.C. 112 rejections are withdrawn due to the amendment.

Response to Arguments

4. Applicant's arguments have been fully considered but are moot in view of new ground(s) of rejection.

Claim Objections

5. Claim 1 recites "data types to facilitates." This is believed to be a grammatical error. Revision for similar grammatical errors is required.
6. Claim 1 contains multiple limitations that lack antecedent basis, e.g., "data types" on line 16 should be "the data types." "The UNI and the NNI" on line 11 should be "the UNIs and the NNIs." "Data frames" on line 13 should be "the data frames" etc. Correction is required.
7. Claim 6 contains multiple limitations that lack antecedent basis, e.g., "the virtual bridge processing unit" on line 5, "data types" on line 7 should be "the data types", "the database" on line 8 should be "the data database" etc. Correction is required.

Claim Rejections - 35 USC § 112

8. The following is a quotation of the first and second paragraphs of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

9. Claims 1-5 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

10. Claims 1-5 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

11. Claim 1 recites "the virtual bridge device switches data between the UNIs and/or the NNIs, determines whether data frames entering the virtual bridge device are control messages, and transmits the control messages to an external control system for processing via the control interface unit if the data frames entering the virtual bridge device are control messages and switches data frames if the data frames entering the virtual bridge device are control messages." However, the abstract of the application

recites "data frames of message except control messages are switched." Therefore, the claimed limitation is not supported by the specification. Note that the second paragraph in the Amendment to the specification (par. 5 and 6 on page 6) submitted on 02/26/2008 recites "the virtual bridge device... switches data frames if the data frames entering the virtual bridge device are control messages." This is in accordance with claim 1, but conflicts other parts of the specification such as the abstract. Throughout revision of the specification is required. For examining purpose, the limitation will be read as "the virtual bridge device... switches data frames if the data frames entering the virtual bridge device are not control messages".

12. Furthermore, it is not clear whether "the virtual bridge device switches data between the UNIs and/or the NNIs and then switches data frames if the data frames entering the virtual bridge device are control messages." If the virtual bridge device already switches data between the UNIs and/or the NNIs, why does it need to check whether data frames are control messages and then switch data frames again? The phrase "switch data frames" is completely vague. It can be read as either switching between different data frames or switching data frames between different interfaces (UNIs and NNIs). Applicant is required to revise the claims to conform to the specification and clearly show support for the limitations in the next communication.

13. Claim 1 recites in the first limitation a system comprising at least UNI and/or at least one NNI, so it can be read as a system with just at least one UNI. However, in the second limitation, the claim recites a data converting device coupled with the UNIs and

the NNIs. Therefore, the first and second limitations conflict with one another. Applicant is required to revise the use of "and/or" to avoid such errors.

14. Claim 1 is vague and indefinite. The claim recites on line 14 "a virtual bridge processing unit...to process data." It is not clear whether data is referred to as the data frames on line 13, there is no clear relationship or distinction between the two. Also the claim recites "data formats" e.g. on line 8 and "data types" e.g. on line 16; however, there is no clear relationship or distinction between the two. On lines 14 and 15, the virtual bridge processing unit and the database both process data. It is vague what processing data means since both units are doing the same function. The claim also recites a control interface unit... to control the database on lines 18-19. it is vague what controlling means.

15. Claim 1 is rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential elements, such omission amounting to a gap between the elements. See MPEP § 2172.01. The claim recites "the virtual interface device coupled to the UNI and the NNI." However, fig. 4 of the specification clearly shows an essential element between the virtual interface device and the NNI (mapping and demapping device being omitted in the claim)

16. Claims 6-12 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. It is not clear whether "frames" on line 4 is the same as "data frames" on line 1. It is not clear whether "data processing" on line 5 is applied to the data frames, and what data processing really means, since data processing can

have multiple meanings. It is not clear "to control the database" on line 8 means, since it is believed that the control information is transferred via the control interface and the control interface unit does nothing to control the database. It is not clear what "modifying the data frames" on line 33 means, since modifying has multiple meanings and it's vague what modifying the data frames has anything to do with retrieving a rule from the database on lines 28-30.

17. Claim 6 is rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential steps, such omission amounting to a gap between the steps. See MPEP § 2172.01. Claim 6 recites "extracting a virtual bridge number and a port number" on line 19-20. However, it is not clear what "extracting a virtual bridge number and a port number" is for in the claim because the use of the virtual bridge number and the port number are not referred to later in the claim.

18. Claim 6 is rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential structural cooperative relationships of elements, such omission amounting to a gap between the necessary structural connections. See MPEP § 2172.01. The claim recites an inter-device interface, a database coupled with a virtual bridge processing unit, and a control interface unit coupled with the database. However, there are no clear connections between these elements in contrast to what is disclosed in figure 4 of the specification.

Allowable Subject Matter

19. Claims 6-12 would be allowable if rewritten or amended to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, and the claim objection(s), set forth in this Office action.

Claim Rejections - 35 USC § 103

20. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

21. Claims 1-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Casey et al. (US 2003/0142674, hereafter Casey), in view of Zelig et al. (US 2004/0037279, hereafter Zelig), and further in view of Sinn et al. (US 2004/0010519, hereafter Sinn) and Mahajan et al. (US 2002/0186694, hereafter Mahajan)

22. For claim 1, Casey discloses a system for accessing and transmitting different data frames in a digital transmission network, the system comprises:

at least one user-network interface (UNI), coupled with a subscriber's network (fig. 4, [0037], UNI ports, user network interface); and/or at least a network-network interface (NNI), coupled with the digital transmission network to transfer data ([0037], NNI physical port); and

a data converting device (fig. 1, logical PE, provider edge), coupled with the UNIs and the NNIs, configured to convert data formats between the UNIs or data formats between the NNIs or data formats between the UNIs and the NNIs (fig. 2, logical PE switches Ethernet transport between UNIs and NNI);

Casey does not explicitly disclose:

the data converting device comprises a virtual bridge device and a virtual interface device, the virtual interface device coupled to the UNI and the NNI, the virtual bridge device comprises: an inter-device interface configured to input and output data frames; a virtual bridge processing unit, coupled with the inter-device interface to process data; a database, coupled with the virtual bridge processing unit for data processing and configured to store information indicative of data types to facilitates the data processing according to data types; and a control interface unit, coupled with the database and the virtual bridge processing unit so as to control the database and the virtual bridge processing unit, wherein the virtual bridge device switches data between the UNIs and/or the NNIs and switches data frames;

However, Zelig discloses:

the data converting device comprises a virtual bridge device (fig. 2, [0050], virtual bridge 24) and a virtual interface device, the virtual interface device coupled to the UNI and the NNI (fig. 2, [0050], interfaces connecting the virtual bridge to ports), the virtual bridge device comprises:

an inter-device interface configured to input and output data frames (fig. 2, [0050], interfaces comprising of virtual and physical ports used to input and output data frames);

a virtual bridge processing unit, coupled with the inter-device interface to process data (fig. 2, forwarding engine, coupled to interfaces or ports);

a database, coupled with the virtual bridge processing unit for data processing and configured to store information indicative of data types to facilitates the data processing according to data types (fig. 2, routing table); and

a control interface unit, coupled with the database and the virtual bridge processing unit so as to control the database and the virtual bridge processing unit (fig. 2, [0050], [0051], a multicast server coupled to the forwarding engine and a routing table database)

the virtual bridge device switches data between the UNIs and/or the NNIs and switches data frames which are not control messages (abstract, fig. 4, virtual bridge switching between UNIs and NNI);

Casey-Zelig does not explicitly disclose:

the virtual bridge device and transmits the control messages to an external control system for processing via the control interface unit;

However, Sinn discloses the same (fig. 19, provisioning bridge gets control information from control information system 1200 and transmits to external provisioning system via an interface)

Casey-Zelig-Sinn does not disclose determining whether the data frames entering the virtual bridge device are control messages, and processing according to the determining step.

However, Mahajan discloses determining whether the data frames are control messages or data messages, and processing according to the determining step (abstract, determining control packets from data packets, and forwarding accordingly)

Therefore, it would have been obvious for one skilled in the art at the time of the invention to combine the teachings of Casey, Sinn, Zelig and Mahajan to utilize the virtual bridge structure of Zelig in the invention of Casey to take advantage of the inherent multicast capabilities of existing network router in performing split-horizon traffic forwarding (Zelig, [0015]), and to process control packets and data packets accordingly as disclosed by Mahajan.

23. For claim 2, the claim is rejected as in claim 1. Casey-Zelig-Sinn-Mahajan further discloses the data converting device comprises a data processing and dispatching device (Zelig, fig. 2, forwarding engine), the inter-device interface connects with the data processing and dispatching device (Zelig, fig. 2, interfaces connected to the forwarding engine).

24. For claim 3, the claim is rejected as in claim 1. Casey-Zelig-Sinn-Mahajan further discloses the database comprises a virtual bridge database (Casey, [0084], [0085], VC label), a multicasting database and a forwarding database (Zelig, fig. 2, multicast table

and forwarding DB); the multicasting database and the forwarding database store virtual bridge number, virtual bridge input port (Casey, [0088]), destination address input, Virtual Local Area Network (VLAN) number input, Virtual Metropolitan Area Network (VMAN) number input, virtual bridge output port; the virtual bridge database stores type number input, virtual bridge number, port number, type number output (Casey, [0051], Zelig, [0050], [0051]).

25. For claim 4, the claim is rejected as in claim 1. Casey-Zelig-Sinn-Mahajan further discloses the control interface unit provides an external control interface and adds, deletes, modifies and searches in the database via the control interface, and monitors the virtual bridge processing unit (Sinn, fig. 19, [0144], manually update control information).

26. For claim 5, the claim is rejected as in claim 1. Casey-Zelig-Sinn-Mahajan further discloses the virtual bridge processing unit processes data frames according to embedded logic and controls formats of forwarding items in the forwarding database, formats of multicasting items in the multicasting database, and formats of items in the virtual bridge database (Zelig, fig. 2, forwarding database for forwarding packets, multicast routing table formats and controls packet types).

Conclusion

27. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

28. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hieu T. Hoang whose telephone number is 571-270-1253. The examiner can normally be reached on Monday-Thursday, 8 a.m.-5 p.m., EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bunjob Jaroenchonwanit can be reached on 571-272-3913. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

HH

/Bunjod Jaroenchonwanit/

Supervisory Patent Examiner, Art Unit 2152